

Purpose of the Proposed Plan

The Record of Decision (ROD), which presented the Montana Department of Environmental Quality's (DEQ's) final cleanup decision, was issued for the Bitterroot Valley Sanitary Landfill (BVSL) State Superfund Facility (Facility) on January 24, 2002. DEQ's selected remedy included a Community Water Supply System (CWSS), natural attenuation of groundwater to meet site-specific cleanup levels (SSCLs) along with monitoring until SSCLs were achieved, and implementation of institutional controls (ICs) including restrictive covenants on landfill property and a controlled groundwater area (CGWA) that prohibited or limited the use of shallow groundwater.

- Since DEQ issued the ROD, groundwater remediation is complete in all but two localized areas within the former landfill property. Therefore, the portion of the final remedy requiring a CWSS and CGWA is no longer necessary.
- SSCLs for the contaminants of concern (COCs) identified in the ROD were based on water quality standards that have since been revised to reflect new information regarding the toxicity of each chemical. DEQ is also proposing to revise the SSCLs.
- Since DEQ issued the ROD in 2002, technical knowledge regarding the vapor intrusion (VI) of volatile organic chemicals (VOCs) has advanced, leading DEQ to determine that VI required further investigation. DEQ conducted VI investigations at the Facility, developed cleanup levels, and identified the potential for VI from chloroform to occur. DEQ is proposing to amend the ROD to address VI, establish SSCLs for that pathway and update, and identify the necessity of

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maintaining the existing ICs in the form of restrictive covenants that prohibit development on the former landfill property to mitigate any potential risk posed by VI.

Facility Background

The BVSL Facility is located approximately one mile south of Victor, Ravalli County, Montana, on US Highway 93 (see Figure 1). As defined in the ROD, the Facility includes the historic waste

disposal pit in the southwest portion of the landfill where chloroform and other laboratory wastes were disposed between 1981 and 1985, as well as any contamination emanating from that disposal pit; it does not include the rest of the landfill. At the time the ROD was issued, the groundwater plume, where SSCLs were exceeded, extended eastward a distance of approximately one mile to near the Bitterroot River.

As described in the ROD, the National Institutes

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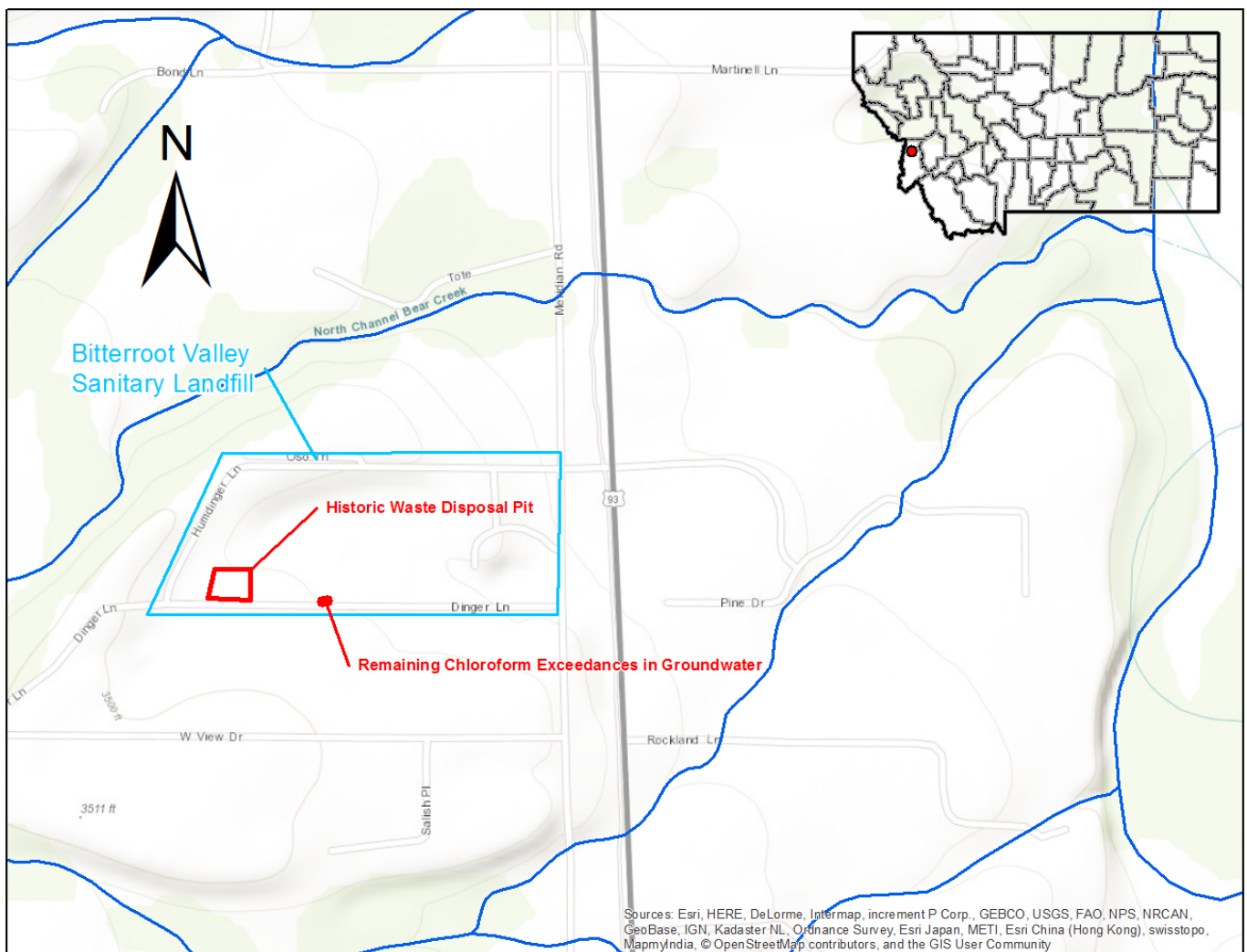


Figure 1

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of Health (NIH), one of the parties DEQ identified as responsible for addressing the Facility, implemented a number of interim actions including hydrogeologic investigations in 1992-93, excavation of the historic disposal pit location and installation of a groundwater remediation system in 1993-94, and installation of 19 deep replacement domestic wells for affected area property owners in 1995-97. NIH abandoned some of the shallow domestic wells and installed deep wells while other shallow wells are still in place, but not currently used for domestic purposes. The deep wells included treatment systems for iron and manganese. NIH also operated an active groundwater remediation system until 2012 when it was shut down.

The ROD issued in 2002 required a CWSS, ICs including restrictive covenants and a CGWA, natural attenuation, and groundwater monitoring. In 2004, the Montana Department of Natural Resources and Conservation (DNRC) implemented the CGWA, which limited or prohibited the installation of wells in and near the Facility. Two of the property owners, BVSL, Inc. and Victor Transfer, Inc, also placed the required ICs on their real property in the form of restrictive covenants. The CWSS plan was reviewed and approved by DEQ's Public Water Supply Section and a legal entity, the South Victor Water Corporation (SVWC), was formed by the

residents to own, operate, and maintain the CWSS once it was constructed and connected to residences and businesses. Ultimately, the SVWC failed to acquire the land and easements for placement of the well field for the CWSS. This failure ended NIH's obligation to install the CWSS, and the SVWC dissolved in December 2004.

NIH continued groundwater monitoring until September 2017 at which time DEQ assumed responsibility for monitoring. Based on monitoring data from 1992 through 2017, concentrations of COCs in groundwater associated with the Facility have steadily declined and now meet SSCLs in all but two wells on the former landfill property. (Groundwater monitoring has also identified exceedances of Montana water quality [DEQ-7] standards for vinyl chloride in two wells on property owned by Victor Transfer, Inc.; however, vinyl chloride is not a COC associated with the BVSL Facility and is not addressed by this Proposed Plan.)

Regulatory Basis and Status

Under Section 75-10-721, MCA, DEQ must select a remedy that will attain a degree of cleanup of the hazardous and deleterious substance and control of a threatened release or further release of the substance that assures protection of public health, safety, and welfare and of the environment. In approving or carrying out remedial actions performed under this statute, DEQ must require cleanup consistent with

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applicable state and federal environmental requirements, criteria, and limitations (ERCLs), and may consider substantive state and federal ERCLs that are relevant to site conditions. In addition, DEQ must select a remedy considering present and reasonably anticipated future uses, giving due consideration to institutional controls. The selected remedy must mitigate risk, be effective and reliable in the short- and long-term, be practicable and implementable, and use engineering controls. DEQ also evaluates the remedy for cost effectiveness. Finally, DEQ considers the acceptability of the remedy to the affected community, as indicated by community members and the local government during the public comment period. The amendment to the ROD, as discussed in this Proposed Plan, meets these criteria (see Evaluation Criteria section).

Proposed ROD Amendment

Community Water Supply System

The ROD required installation of a CWSS to provide an alternate source of water to residents and businesses impacted by COCs from the Facility. However, groundwater now meets DEQ-7 standards except in two wells on the former landfill property, and that property is subject to existing ICs which prohibit the installation of wells, the use of groundwater, or any residential, industrial, or commercial development.

Therefore, formerly impacted groundwater outside of the footprint of the landfill and current transfer station may now be used in conjunction with domestic wells and installation of a CWSS is not necessary.

Re-establishment of Domestic Wells

The recent groundwater monitoring at the Facility demonstrates that concentrations of COCs associated with the Facility no longer exceed DEQ-7 standards except in two wells on the former landfill property. Therefore, domestic well water sources may be re-established in the shallow groundwater and the CGWA can be closed. Once the CGWA is closed by DNRC, shallow wells can be re-established at properties where NIH did not abandon the shallow wells and other property owners may elect to install shallow wells. Deep wells needing iron and manganese treatment will not be necessary.

Groundwater monitoring data from 2012 to 2017 shows that only two monitoring wells remain that have chloroform concentrations exceeding DEQ-7 standards. Both wells are located on the former landfill property for which restrictive covenants are already in place that restrict groundwater use to monitoring purposes only. Natural attenuation processes will continue to occur and DEQ-7 standards will ultimately be met at these two locations (see Figure 2). DEQ will continue groundwater monitoring in these two wells until DEQ-7 standards for COCs associated

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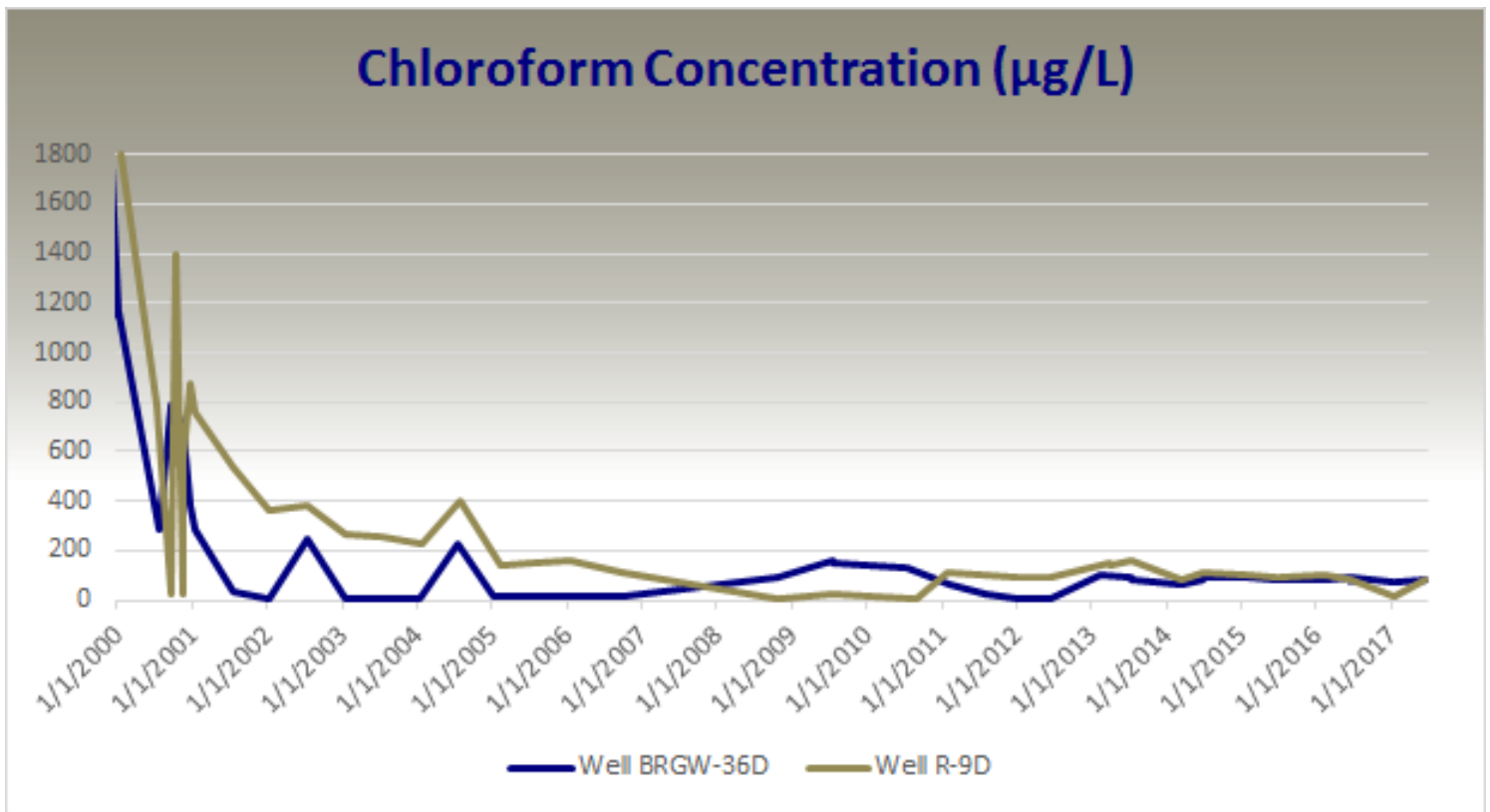


Figure 2

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with the Facility are met.

Soil Gas and Vapor Intrusion

The ROD did not address VI because it was not identified as a risk in 2002. Following improvements in testing methods and increased understanding of the VI pathway since the ROD issuance, DEQ conducted soil gas investigations at the Facility in 2013 and 2014 and developed cleanup levels for residential and commercial indoor air of $1.4 \mu\text{g}/\text{m}^3$ and $5.9 \mu\text{g}/\text{m}^3$ of chloroform, respectively. These cleanup levels are based on an excess lifetime cancer risk of 1 in 100,000 which DEQ has determined is an appropriate risk level. The results of the soil gas and VI investigations demonstrate elevated soil

gas concentrations of chloroform above and near the groundwater plume on the former landfill property, but do not demonstrate that VI is occurring in nearby residential structures. Based on the results of these investigations, the existing ICs on the former landfill property that prohibit residential, industrial, or commercial development are adequately protective of human health.

Updating Cleanup Levels for Contaminants of Concern

Since DEQ issued the ROD in 2002, DEQ-7 standards, which were the basis for the SSCLs in groundwater, have changed. DEQ proposes to revise the SSCLs for the Facility to current 2018

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standards to reflect the most recent risk-based criteria used by DEQ. The updated groundwater value is listed for chloroform —the only contaminant associated with the Facility that has remaining exceedances—in the following table.

Original and Current Chloroform Cleanup Levels

Media	2002 Cleanup	2018 Cleanup
Groundwater	60 µg/L	70 µg/L
Residential Indoor Air	NA*	1.4 µg/m ³
Commercial Indoor Air	NA*	5.9 µg/m ³
*Residential and Commercial Indoor Air Cleanup Levels were not developed as part of the 2002 ROD µg/L = micrograms per liter µg/m ³ = micrograms per cubic meter		

Evaluation Criteria

DEQ has evaluated the proposed ROD amendments and found them to meet the following criteria:

Overall protection of human health and the environment

The remedy as modified by the proposed ROD Amendment will be protective of public health,

safety and welfare, and the environment because all SSCLs are met with the exception of two wells on the former landfill property. Existing ICs ensure that no one will be exposed to COCs exceeding SSCLs while natural attenuation processes continue, and monitoring will be used to confirm the attainment of SSCLs in the remaining two wells on the former landfill property.

Compliance with applicable state and federal environmental requirements, criteria, and limitations (ERCLs)

The remedy as modified by the proposed ROD Amendment complies with all ERCLs because DEQ-7 standards are met throughout the Facility except for two wells on the former landfill property and monitoring will be used to confirm that ERCLs are eventually met in those wells.

Mitigation of risks to public health, safety, and welfare and to the environment

The remedy as modified by the proposed ROD Amendment mitigates risks to public health, safety and welfare and the environment to an acceptable level as the groundwater outside the former landfill property meets DEQ-7 standards and there are no VI risks outside the former landfill property. All other SSCLs established in the ROD are met.

Short-term and long-term effectiveness and reliability

The remedy as modified by the proposed ROD

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Amendment provides short-term and long-term effectiveness and reliability as DEQ-7 standards for COCs associated with the Facility have been met in groundwater off the former landfill property and it can be used by residents and businesses without the necessity of a treatment system.

Technical practicability and feasibility

The remedy as modified by the proposed ROD Amendment is technically practicable and implementable as it includes petitioning DNRC to remove the CGWA, which is an administrative process, and removes the requirement for creation of a CWSS, which is no longer necessary to provide businesses and residents with a clean source of water.

Cost-effectiveness

The remedy as modified by the proposed ROD amendment is cost effective as only limited groundwater monitoring will be necessary. Any existing old shallow domestic wells that were not abandoned can be re-established and no treatment for iron and manganese will be necessary. Groundwater monitoring costs are estimated at \$4,540 per year. One-time cost to re-establish or replace shallow domestic wells is \$148,950. The cost to sample the domestic wells at startup for chloroform is \$5950.

Acceptance by the community

Community acceptance will be evaluated in the

ROD Amendment after the public comment period closes and DEQ completes review of the comments received.

Glossary and Acronyms

BVSL	Bitterroot Valley Sanitary Landfill Facility
CECRA	Comprehensive Environmental Cleanup and Responsibility Act
CGWA	controlled groundwater area
CWSS	community water supply system
DEQ-7	Circular DEQ-7, Montana Numeric Water Quality Standards
ERCLs	environmental requirements, criteria, or limitations
ICs	institutional controls
MCA	Montana Code Annotated
ROD	Record of Decision
SDWA	Federal Safe Drinking Water Act
SVWC	South Victor Water Corporation (defunct)
VI	vapor intrusion
VOCs	volatile organic compounds

PUBLIC MEETING AND REQUEST FOR COMMENTS

DEQ is proposing fundamental changes to the ROD for the Bitterroot Valley Sanitary Landfill Facility. These changes affect the scope of the remedy and remedial components. DEQ is interested in your comments on the proposed changes and is accepting comments from November 5, 2018 through December 5, 2018. Please email your comments to **mkent@mt.gov** or submit your comments in writing to:

**Montana DEQ
Waste Management and Remediation Division
c/o Matthew Kent
1225 Cedar Street
Helena, MT 59620-0901**

DEQ will host a combined public meeting and hearing to provide additional information and receive oral comments regarding the Proposed Plan. The meeting will be held in the auditorium of Victor Public Schools, 425 4th Avenue, Victor, Montana on November 14, 2018, from 5:00 pm to 8:00 pm.



P.O. Box 200901

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